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Pharmacotherapeutic Treatment of Schizophrenia in the Department of Veterans Affairs:
Prescribing Patterns and Guideline Adherence

Douglas L. Leslie, Ph.D.¹ and Robert Rosenheck, M.D.^{1,2}

¹ VA Connecticut Mental Illness Research, Education and Clinical Center; Northeast Program Evaluation Center, West Haven VAMC; and the Department of Psychiatry, Yale School of Medicine, New Haven, CT

² Department of Epidemiology and Public Health, Yale School of Medicine, New Haven, CT

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Address correspondence to:

Douglas L. Leslie, Ph.D.
NEPEC/182
950 Campbell Ave.
West Haven, CT 06516

Abstract

Background: Pharmacotherapy is the cornerstone of effective treatment for schizophrenia. This report presents a profile of the use of antipsychotic medications in the treatment of schizophrenia in the Department of Veterans Affairs nationwide.

Methods: Patients were identified as being diagnosed with schizophrenia if they had at least two outpatient encounters with a diagnosis of schizophrenia during fiscal year 1999. All VA prescription drug records written between June and September of 1999 were then collected for these patients. Taking the last antipsychotic prescription during this period and going back seven days, all antipsychotic medications that were prescribed and the amount prescribed for each patient were identified. Measures of polypharmacy and compliance with PORT recommendations were constructed from these data, as well as indicators reflecting the use of atypical antipsychotics. Generalized estimation equations were used to identify patient and facility characteristics that are associated with variations in prescribing practice. At the facility level, we were especially interested in the effect of fiscal pressure, defined as a reduction in per capita expenditure between fiscal years 1995 and 1999, on the availability of atypical antipsychotics because of their high cost.

Results: Of the 30,819 patients in the final sample with schizophrenia and at least one prescription for an antipsychotic, 2,096 (6.8%) met criteria for polypharmacy, and 4,523 (14.7%) were dosed above the PORT recommendations. Of the patients who received atypical antipsychotics (18,124 or 58.8%), most received either olanzapine (8,772 or 48.4%) or risperidone (7,944 or 43.8%), while far fewer received quetiapine (4.3%) or clozapine (5.2%). Multivariate analysis showed that older patients and minorities were

generally less likely to receive 2 or more antipsychotic medications, to be dosed too high or to receive an atypical antipsychotic. Patients diagnosed with comorbid mental health disorders were generally less likely to be dosed above PORT guidelines and were generally more likely to receive an atypical. Unexpectedly, the change in per capita mental health cost was negatively associated with the likelihood of receiving atypical antipsychotics. Among patients who receive atypicals, the change in per capita mental health costs was positively associated with receiving clozapine or olanzapine, but negatively associated with receiving risperidone. Patient characteristics alone explain 34.4 to 68.7 percent of the total explained variance (2.5% to 10.9%) in most of these measures. Facility characteristics explain an additional 1.2 to 8.0 percent.

Conclusions: The proportion of patients receiving more than one antipsychotic medication or that are dosed higher than the PORT guidelines in VA is relatively small. Over half of all outpatients diagnosed with schizophrenia are prescribed an atypical antipsychotic, and institutional fiscal pressure does not seem to effect prescription patterns of these expensive medications.

I. Introduction

Pharmacotherapy has long been the cornerstone of treatment for schizophrenia. As health care systems respond to pressures to reduce the costs of care, there is a growing concern that quality be systematically monitored and preserved. Performance assessment based on clinically derived practice guidelines provides one mechanism for evaluating the quality of care in a clinical practice or organization. The Schizophrenia Patient Outcomes Research Team (PORT) has developed one widely respected set of guidelines for the treatment of schizophrenia (1).

The Veterans Health Administration of the Department of Veteran Affairs (VA) has not been immune to pressures to reduce health care costs. In 1995, VA experienced a major reorganization in which 22 distinct geographically based Veterans Integrated Service Networks (VISNs) were created, each responsible for the veteran population within its boundaries. An associated goal of the reorganization was to shift the focus of care away from acute inpatient care and towards more ambulatory and primary care in order to improve the accessibility of services and to address anticipated budget reductions (2). Between 1995 and 1999, total mental health expenditures declined by 13%, even without adjustment for inflation (3).

Pharmacologic treatment of schizophrenia has changed in recent years with the introduction of newer atypical antipsychotic medications. These medications (i.e. clozapine, olanzapine, quetiapine and risperidone) are equally or more effective than conventional antipsychotic medications and have substantially superior side effect profiles. However, these medications are considerably more expensive than

conventionals, with annual costs averaging \$5,000 - \$7,000, almost 20 times the \$300 average annual cost of treatment with haloperidol.

As part of an ongoing effort to monitor quality of mental health care in VA (4-7), this report serves two functions: 1) it examines the extent to which pharmacotherapeutic care for patients diagnosed with schizophrenia conforms to the schizophrenia PORT treatment guidelines, and 2) it investigates the availability of atypical antipsychotics to patients in VA. Further, we seek both to profile variations in medication use across VISNs and VA facilities and to identify individual patient and facility characteristics that are associated with these variations.

II. Methods

Sources of data

Data for the study come from national VA administrative databases. First, all VA outpatients diagnosed with schizophrenia during fiscal year 1999 (October 1, 1998 to September 30, 1999) were identified. Patients were identified as being diagnosed with schizophrenia if they had at least two outpatient encounters in a specialty mental health outpatient clinic with a primary or secondary diagnosis of schizophrenia (ICD-9 codes 295.00 – 295.99). The outpatient encounter file, a national database of information concerning all outpatient clinic stops in VA, was used to identify these patients. Next, all prescription drug records for these patients between June and September of 1999 were collected from the Drug Benefit Management System in Hines, Illinois.

Data describing patient characteristics, such as age, ethnicity, other mental health comorbidity, and other measures, were taken from the outpatient encounter file and the outpatient care file, another VA outpatient care database. Data describing facility characteristics were taken from the National Mental Health Program Performance Monitoring System, which, in turn, is based on a variety of national VA databases (3, 8).

Measures

For each patient, the last prescription for an antipsychotic medication between June and September of 1999 was identified as the index prescription. All prescriptions for antipsychotic medications written during the week prior to the index prescription were then identified. Next, chlorpromazine (CPZ) equivalents were calculated for each prescription for a conventional antipsychotic medication based on the updated PORT dosing algorithms (A. Lehmann, personal communication). CPZ equivalents were summed over all conventional antipsychotic prescriptions during the week to assess guideline adherence. If the total daily CPZ equivalent for all conventional antipsychotics prescribed during the week was greater than the PORT recommendation (1000 mg), the patient was identified as being dosed too high.¹ For the atypical antipsychotics, the total daily dosage for each medication prescribed during the week was calculated. If the total dosage of any atypical was greater than the PORT recommendation, the patient was identified as being dosed too high. In addition, a patient was also identified as being

¹ The maximum PORT recommended dose for atypical antipsychotic medications are as follows: clozapine 600 mg/day, olanzapine 20 mg/day, quetiapine 450 mg/day and risperidone 6 mg/day.

dosed too high if they were prescribed the maximum PORT recommended dose of one atypical *and* were also prescribed any amount of a second atypical.

Although prescribing multiple antipsychotic medications is not addressed in the PORT guidelines, polypharmacy generally is not recommended for schizophrenia patients because additional medications may exacerbate side effects while doing little to alleviate symptoms (9, 10). Patients who were prescribed more than one antipsychotic medication during the week were identified as receiving polypharmacy. In addition, the subgroup of patients whose polypharmacy consisted of receiving both an atypical and a conventional antipsychotic medication was examined.

Analysis

Data analysis proceeded in several steps. First, the proportion of patients with the following characteristics were determined: 1) those who received multiple antipsychotic medications, 2) those who were dosed above the PORT recommendation with any medication, 3) those who were dosed above the PORT recommendation with a conventional antipsychotic, 4) those who were dosed above the PORT recommendation with an atypical antipsychotic, 5) those who received any atypical antipsychotic, and 6) through 9) those who received the specific atypical antipsychotic medications clozapine, olanzapine, quetiapine, or risperidone among patients receiving any atypical.

Next, logistic regressions were run to identify patient and hospital characteristics that predict whether patients belong to each of the 9 groups described above. Each regression model included such patient characteristics as age, whether the patient was Black or Hispanic, and the distance the patient lived from the nearest VA hospital.

Dichotomous variables were also included describing whether the patient had another primary or secondary diagnosis of mental illness in addition to a diagnosis of schizophrenia during 1999. Diagnoses were based on ICD-9 diagnostic codes and included the following: organic brain syndrome or Alzheimer's disease, substance abuse, major depression or bipolar disorder, PTSD, anxiety disorder or adjustment reaction, personality disorder, and other mental health disorders. ICD-9 diagnostic codes corresponding to these disorders are reported in the appendix. Two dichotomous variables were included to measure the degree of service connected disability: 0 to 50 percent, and 60 to 100 percent. Additional dichotomous variables were also included to measure the number of days of psychiatric hospitalization during the previous fiscal year. Using a median split for hospital days, dichotomous variables were defined to represent patients hospitalized for 1 to 18 days (N=3,660) and patients hospitalized for 19 days or more (N=3,593).

In addition to the patient characteristics, the following facility characteristics were also measured: 1) the continuity of outpatient care, 2) academic emphasis, 3) inpatient budgetary emphasis, 4) recent fiscal stress, and 5) baseline per capita mental health costs in 1995. These measures do not specifically concern the patients in the sample, but rather all patients at that particular facility. The continuity measure is defined as the average number of months with an outpatient visit in the six months after the first outpatient visit of the fiscal year for treated outpatients with schizophrenia, major affective disorder, or bipolar disorder (National Mental Health Program Performance Monitoring System Report (NMHPPMS), table 4-11B). The measure of academic emphasis is the fraction of mental health costs that are allocated to research and education (NMHPPMS table 6-9),

while inpatient budgetary emphasis is measured by the fraction of mental health costs that are attributable to inpatient care (NMHPPMS table 6-9). Fiscal strain is measured as the percent change in per capita mental health costs from 1995 to 1999 (created from data in tables 5-6 and 6-7 of NMHPPMS).

Because patients are nested within facilities and both patient and facility characteristics are included in the regression models, the observations are not independent. To correct for the correlated nature of these data, the method of generalized estimation equations (11) was used in all analyses.

To examine the proportion of all explained variance in each of the dependent variables that is explained by patient and facility characteristics, a series of ordinary least squares (OLS) analyses were conducted. First, each of the dependent variables was regressed on patient characteristics alone. Then a series of variables were added to reflect measured facility characteristics. Finally, a model including patient characteristics and a series of dichotomous variables representing each facility was analyzed to assess the total variance that was attributable to patient characteristics and cross-facility variation. These models were used to identify the maximum explained variance for each measure. We then determined the proportion of the overall explained variance explained by patient and facility characteristics.

III. Results

Table 1 shows characteristics of the sample. The sample is overwhelmingly male, which is a general characteristic of the veteran population. Average age was 52 years and the average annual income was \$14,370. Of the 19,116 patients (63.1%) who had

another comorbid mental health diagnosis in addition to schizophrenia, most (57.9%) were diagnosed with major depression or bipolar disorder. Substance abuse was the next most common comorbid diagnosis at 33.2% (22.0% drug abuse and 25.4% alcohol abuse). The majority of patients had a service connected disability (57.8%), most in the 60 to 100% range (43.8%).

Hospital characteristics are reported in the second frame of Table 1. There were 141 VA facilities represented in the sample. The facility-level continuity of care measure averaged 4.41, meaning that in the 6 months after the first outpatient visit of the fiscal year, patients averaged 4.41 separate months in which they had at least one outpatient visit. The average fraction of mental health costs that are spent on research and education was 6% (sd=5%), and the fraction of mental health costs that are spent on inpatient care averaged 56% (sd=20%). The average per capita mental health expenditure was \$3,450 (sd=\$2,010) in 1995, which fell 17% (sd=26.4%) on average between 1995 and 1999.

A fairly small proportion of the sample was treated with multiple antipsychotic medications (6.8%). A higher proportion (14.7%) was prescribed a dose that was higher than the PORT recommendation, with most of these patients being dosed too high on a conventional antipsychotic medication. The majority (58.8%) of patients received an atypical antipsychotic. Among these patients, most received either olanzapine (48.4%) or risperidone (43.8%), with much smaller proportions receiving quetiapine (4.3%) or clozapine (5.2%).

Tables 2 and 3 report pharmacy measures at the level of the VISN and the facility, respectively. The coefficient of variation at the bottom of each table indicates the amount

of variation among VISNs and facilities. At both the VISN level and the facility level, the greatest variation was in the percentage of patients prescribed multiple antipsychotic medications. There was the least variability in the percentage of patients prescribed any atypical antipsychotic medication.

Table 4 shows the results of the logistic regression models. Each column represents a different model, with the dependent variable listed at the top of the column.

Patient Characteristics

Older patients were significantly less likely to receive polypharmacy, to be dosed above PORT guidelines, or to receive an atypical antipsychotics. Among patients who did receive an atypical, older patients were more likely to receive risperidone and less likely to receive any of the other atypicals. Black patients were significantly less likely to receive polypharmacy or to receive any atypical. Paradoxically, Black patients were less likely to be dosed above PORT guidelines on an atypical, but more likely to be dosed above PORT guidelines on a conventional.

With the exception of major depression/bipolar disorder and substance abuse, having a comorbid mental health diagnosis generally did not have a significant effect on whether a patient received polypharmacy. However, these patients were more likely to receive an atypical, especially those with affective disorder or Alzheimer's Disease. In general, a comorbid mental health diagnosis decreased the likelihood that a patient was dosed above PORT guidelines.

Unexpectedly, patients who had a service connected disability were less likely to receive an atypical. Patients who were 0 to 50 percent service connected were less likely than patients without a service connected disability to receive polypharmacy or to be above PORT guidelines, yet patients who were 60 to 100 percent service connected were more likely to be in these groups, presumably because of the severity of their illness.

Psychiatric hospitalization in the previous year was a significant predictor of most of our measures. Patients with between 1 and 18 inpatient psychiatric days in the previous year were significantly more likely to receive multiple antipsychotic medications or to receive an atypical antipsychotic. Among patients who receive an atypical, these patients were significantly more likely to receive quetiapine and less likely to receive clozapine. Having been hospitalized for 19 or more days for a psychiatric disorder in the previous year is the strongest predictor of whether patients receive polypharmacy, are dosed above PORT recommendations, or receive an atypical. Among patients who receive an atypical, these patients were significantly more likely to receive clozapine or quetiapine and less likely to receive risperidone.

Facility Characteristics

Patients treated at facilities with a higher fraction of mental health costs spent on research and education were more likely to receive polypharmacy or to be dosed above PORT guidelines. Patients receiving an atypical from more academically oriented hospitals were more likely to receive clozapine and quetiapine and less likely to receive risperidone.

Patients treated at hospitals with a higher fraction of mental health costs spent on inpatient care were more likely to be dosed above PORT guidelines, possibly because these facilities treat sicker patients more often referred from facilities that emphasize acute care. Among patients who received atypicals, patients treated at these hospitals were less likely to be prescribed olanzapine and more likely to receive risperidone.

Patients treated at facilities with larger declines in per capita funding were more likely to receive an atypical, even after controlling for the absolute level of funding in 1995. Among patients who are prescribed an atypical, patients at facilities with greater fiscal pressure were more likely to receive risperidone and less likely to be prescribed clozapine or olanzapine.

The last rows of the table report the R^2 statistics and sources of explained variance associated with OLS regressions of each of the dependent variables on 1) patient characteristics only, 2) both patient and facility characteristics, and 3) patient characteristics and dummy variables for facilities. These R^2 statistics suggest how much of the variance in each of the dependent measures is explained by 1) patient characteristics alone, 2) the addition of facility characteristics, and 3) the full model. The last 3 rows indicate the incremental proportion of total explained variance that can be attributed to patient characteristics, measured facility characteristics, and to the model of total facility effects. The maximum explained variance was quite small, ranging from 2.5% to 10.9%. Patient characteristics alone explain from 34% to 69% of the total explained variance for most of our measures. Patient characteristics do not explain as much of the variance in the number of patients who receive olanzapine or risperidone.

Measured facility characteristics only explain an additional 1.2% to 8.1% of the total explained variance, while the dichotomous variables representing facilities explain an additional 25% to 84% of the total explained variance over patient and measured facility characteristics. This suggests that although facility effects are important, only a small portion of the facility-level effects were captured by the facility characteristics included in the models.

IV. Discussion

This study profiled pharmacologic treatment of patients with schizophrenia in VA. The proportion of patients who were treated with more than one antipsychotic medication, who were dosed above the schizophrenia PORT recommended dosage, and who were prescribed an atypical antipsychotic medication were determined. Patient and facility characteristics that were associated with these measures were also investigated. Only a small proportion (6.8%) of patients were prescribed multiple antipsychotic treatment regimens, while a higher percentage (14.7%) were dosed above PORT guidelines. The majority of patients (58.8%) were prescribed an atypical antipsychotic, most often olanzapine or risperidone. Logistic regression analysis revealed that older patients were significantly less likely to be prescribed multiple antipsychotic agents, to be dosed above PORT guidelines, or to receive an atypical antipsychotic.

Atypical antipsychotics are generally considered preferable to conventional antipsychotics on clinical grounds because of their effectiveness and superior side effect profile. Since atypicals are also substantially more expensive than conventional antipsychotics, it was expected that patients in facilities with larger reductions in per

capita mental health spending would be less likely to receive an atypical. Surprisingly, patients treated at facilities with greater fiscal pressure were more likely to receive an atypical antipsychotic medication, even after controlling for overall per capita mental health costs in 1995. It would appear that budgetary pressures do not influence prescribing patterns for expensive medications or that atypicals are used at facilities experiencing high budgetary pressure in the hope that they may reduce other treatment costs.

Patients with comorbid mental health diagnoses, especially Alzheimer's and major affective disorder, were more likely to be prescribed an atypical, perhaps because these patients are sicker. Among patients with schizophrenia and major effective disorder, studies suggest atypical antipsychotics may be particularly effective (12). However, patients with a service-connected disability were less likely to receive an atypical. Since these patients are also generally sicker than non-service-connected patients, one might expect these patients to be more likely to be prescribed an atypical. One possible explanation is that service-connected individuals have probably been in the VA system for longer periods of time, are stabilized on conventional antipsychotic treatments, and either these patients or their clinicians are reluctant to change medications.

One might also hypothesize that patients treated at facilities with greater academic emphasis would be more likely to receive atypicals and less likely to receive polypharmacy or to be dosed above PORT guidelines because providers at these facilities may be more attuned to new treatment technologies and guidelines. However, the

fraction of mental health costs spent on research and education had no significant effects on the likelihood of receiving atypical antipsychotics and was positively associated with the likelihood of receiving polypharmacy and being dosed above PORT guidelines.

Among patients who did receive atypicals, those who were treated at facilities with a higher fraction of mental health costs spent on research and education were more likely to be prescribed clozapine and quetiapine and less likely to receive risperidone.

A limitation of the analyses presented in this report relates to the difficulty in measuring prescribing patterns using administrative prescription data. Prescriptions may last for varying lengths of time. Patients with multiple prescriptions may run out of their medications and need to see their doctor to refill their prescriptions at different times. We collect all prescription drug records during a one-week period, but a longer time frame may be necessary to identify all of the drugs a particular patient is taking. Hence, our measures of polypharmacy or whether a patient is dosed above PORT guidelines may be underestimated.

While the proportions of patients diagnosed with schizophrenia who are prescribed multiple antipsychotic medications or who are prescribed a dose that exceeds PORT guidelines are fairly small, these phenomena are still a concern. These medications are studied extensively before they are approved for use, but trials typically do not include combinations with other antipsychotics or abnormally high doses. Hence, the effects of these treatment regimens are unknown. More research is currently underway to investigate why physicians are prescribing in this manner.

Appendix

Organic brain syndrome or Alzheimer's	290.00-290.00; 293.00-294.99, 331.00, 310.00-310.99
Substance abuse	303.00-303.99; 305.00 (Alcohol Abuse) 292.00-292.99; 304.00-304.99; 305.10-305.99 (Drug Abuse)
Other psychosis	297.00-299.99
Major depression/bipolar disorder	296.00-296.99; 300.40-300.49; 301.10-301.19; 311.00-311.99
PTSD	309.81
Anxiety disorder or adjustment reaction	300.00-300.39; 300.41-300.99; 309.00-309.80; 309.82-309.99
Personality disorder	301.00-301.09; 301.20-301.99
Other mental health disorders	290.00-312.99; 331.00-331.99 not elsewhere classified

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Table 1. Sample characteristics

Variable	N	%	Mean	Std Dev
Age	30,819		51.8	11.7
Income (\$000)	30,819		14.37	17.37
Female	1,686	5.5%		
Black	8,005	26.0%		
Hispanic	1,217	3.9%		
Service Connected 0-50%	4,328	14.0%		
Service Connected 60-100%	13,507	43.8%		
1 to 18 IP psych days in previous year	3,660	11.9%		
19 or more IP psych days in previous year	3,593	11.7%		
Comorbid mental health diagnosis	19,116	63.1%		
Any OBS or Alzh. DX	2,192	11.5%		
Any Substance Abuse DX	6,350	33.2%		
Any Drug Abuse	4,212	22.0%		
Any Alcohol Abuse	4,865	25.4%		
Any Major Dep/Bipolar DX	11,060	57.9%		
Any PTSD DX	3,459	18.1%		
Any Anx Dis/Adj Reaction DX	5,201	27.2%		
Any Personality Disorder DX	1,890	9.9%		
Any Other MH DX	2,527	13.2%		
Distance to VAMC	141		24.4	87.43
Continuity of care	141		4.41	1.11
Fraction of MH costs on R&E	141		0.06	0.05
Fraction of MH costs on IP care	141		0.56	0.2
Percent change in per capita MH costs	141		-17.24	26.37
1995 per capita MH costs (\$000)	141		3.45	2.01
Polypharmacy	2,096	6.8%		
Receiving both atypical and conventional	1,615	77.1%		
Dose higher than PORT guidelines	4,523	14.7%		
Conventional antipsychotics	3,430	11.1%		
Atypical antipsychotics	2,705	8.8%		
Received any conventional antipsychotic	14,310	46.4%		
Received any atypical antipsychotic	18,124	58.8%		
Clozapine	935	5.2%		
Olanzapine	8,772	48.4%		
Quetiapine	773	4.3%		
Risperadone	7,944	43.8%		

Table 2. VISN-level pharmacy measures

VISN	N	Percent with polypharmacy in past week	Percent dosed higher than PORT guidelines	Percent dosed high on conventionals	Percent dosed high on atypicals	Percent prescribed any conventional	Percent prescribed any atypical	Percent prescribed clozapine	Percent prescribed olanzapine	Percent prescribed quetiapine	Percent prescribed risperidone
1	274	8.0%	12.0%	8.8%	8.8%	47.4%	58.0%	3.6%	27.7%	4.4%	23.4%
2	515	7.2%	17.1%	12.4%	11.1%	43.7%	61.9%	3.1%	21.9%	1.4%	36.5%
3	1474	7.8%	15.6%	12.2%	8.6%	54.6%	52.0%	1.8%	26.1%	0.9%	24.2%
4	2370	7.1%	12.5%	9.1%	6.5%	54.9%	51.1%	2.2%	22.3%	1.7%	25.4%
5	1013	7.5%	14.2%	11.1%	7.8%	43.5%	62.3%	2.0%	36.8%	2.8%	21.6%
6	1322	4.1%	13.8%	10.1%	7.9%	47.9%	55.1%	1.8%	25.5%	1.1%	27.2%
7	2165	6.5%	14.1%	11.1%	8.2%	43.9%	61.0%	2.6%	30.1%	4.1%	25.4%
8	1631	5.7%	12.0%	9.0%	6.5%	57.9%	45.9%	1.7%	23.2%	1.0%	20.7%
9	1269	4.1%	12.6%	9.9%	7.3%	51.9%	50.7%	2.8%	24.0%	2.0%	22.9%
10	1735	8.3%	15.9%	13.9%	8.1%	51.6%	54.6%	7.0%	24.8%	3.3%	20.3%
11	1967	5.5%	17.0%	14.0%	7.6%	54.7%	50.0%	2.8%	26.5%	1.4%	19.6%
12	1432	7.4%	13.3%	9.7%	8.4%	41.6%	64.2%	4.9%	27.6%	2.4%	30.4%
13	833	6.1%	14.3%	9.2%	10.0%	42.5%	61.7%	4.7%	30.0%	1.0%	27.5%
14	562	6.1%	19.2%	15.5%	13.0%	45.4%	59.4%	3.9%	26.7%	1.8%	27.9%
15	1452	11.7%	16.9%	13.9%	9.4%	46.8%	63.2%	2.3%	31.7%	3.0%	27.5%
16	2855	6.4%	14.5%	10.5%	9.7%	37.0%	67.7%	2.0%	34.4%	2.2%	30.4%
17	1394	6.2%	13.7%	10.1%	8.3%	41.2%	63.4%	3.5%	33.2%	5.7%	22.4%
18	906	4.9%	10.4%	6.4%	7.2%	41.2%	62.8%	1.3%	28.3%	1.9%	31.8%
19	792	8.1%	13.8%	10.1%	9.0%	41.7%	65.2%	4.4%	35.1%	2.4%	24.2%
20	1243	6.2%	16.2%	11.3%	11.4%	41.8%	63.0%	3.8%	30.5%	3.3%	26.3%
21	1601	7.6%	17.7%	13.3%	11.7%	38.6%	67.1%	3.9%	35.7%	3.2%	25.6%
22	2014	7.3%	16.1%	11.6%	11.0%	44.5%	60.6%	3.1%	24.3%	3.8%	30.8%
Min		4.1%	10.4%	6.4%	6.5%	37.0%	45.9%	1.3%	21.9%	0.9%	19.6%
Max		11.7%	19.2%	15.5%	13.0%	57.9%	67.7%	7.0%	36.8%	5.7%	36.5%
Mean	1,401	6.8%	14.7%	11.1%	9.0%	46.1%	59.1%	3.2%	28.5%	2.5%	26.0%
Std. Dev.	634	1.6%	2.2%	2.2%	1.8%	5.8%	6.1%	1.3%	4.5%	1.3%	4.2%
Coeff. of Var.	0.45	0.24	0.15	0.20	0.20	0.13	0.10	0.42	0.16	0.51	0.16

Table 3. Station-level pharmacy measures

VISN	Station	Station name	N	Percent with polypharmacy in past week	Percent dosed higher than PORT guidelines	Percent dosed high on conventionals	Percent dosed high on atypicals	Percent prescribed any conventional	Percent prescribed any atypical	Percent prescribed clozapine	Percent prescribed olanzapine	Percent prescribed quetiapine	Percent prescribed risperidone
1	402	TOGUS	26	15.4%	15.4%	11.5%	7.7%	69.2%	38.5%	3.8%	15.4%	0.0%	23.1%
1	405	WHITE RIVER JCT	9	0.0%	44.4%	33.3%	44.4%	11.1%	88.9%	22.2%	11.1%	0.0%	55.6%
1	518	BEDFORD	28	10.7%	10.7%	10.7%	3.6%	50.0%	50.0%	3.6%	21.4%	7.1%	17.9%
1	523	BOSTON/BROCKTON	76	11.8%	7.9%	6.6%	3.9%	46.1%	63.2%	0.0%	31.6%	9.2%	23.7%
1	608	MANCHESTER	12	0.0%	0.0%	0.0%	0.0%	83.3%	16.7%	0.0%	0.0%	0.0%	16.7%
1	631	NORTHAMPTON	30	3.3%	10.0%	3.3%	6.7%	33.3%	70.0%	3.3%	33.3%	3.3%	33.3%
1	650	PROVIDENCE	18	0.0%	27.8%	16.7%	27.8%	22.2%	77.8%	5.6%	50.0%	0.0%	22.2%
1	689	CONNECTICUT HCS†	75	6.7%	10.7%	8.0%	9.3%	50.7%	56.0%	5.3%	29.3%	2.7%	18.7%
2	500	ALBANY	85	4.7%	20.0%	18.8%	10.6%	43.5%	60.0%	11.8%	22.4%	2.4%	24.7%
2	514	BATH	56	0.0%	12.5%	5.4%	8.9%	39.3%	60.7%	1.8%	14.3%	0.0%	44.6%
2	528	WESTERN NY HCS/BATAVIA	139	7.2%	14.4%	10.1%	8.6%	43.9%	61.2%	1.4%	27.3%	0.0%	33.8%
2	532	CANANDAIGUA	153	8.5%	20.9%	16.3%	13.7%	48.4%	59.5%	2.0%	16.3%	0.0%	41.2%
2	670	SYRACUSE	82	12.2%	14.6%	7.3%	12.2%	37.8%	70.7%	0.0%	28.0%	6.1%	39.0%
3	526	BRONX	87	9.2%	5.7%	4.6%	2.3%	54.0%	54.0%	2.3%	25.3%	3.4%	23.0%
3	527	NEW YORK HARBOR HCS: BROO	193	6.2%	7.3%	6.2%	4.1%	49.2%	56.5%	0.5%	38.9%	0.5%	16.6%
3	561	NEW JERSEY HCS/LYONS	579	6.6%	19.5%	15.0%	11.2%	50.4%	55.1%	2.2%	25.4%	0.3%	28.0%
3	620	HUDSON VALLEY HCS/CASTLE POINT	216	16.2%	20.8%	17.6%	9.7%	55.1%	57.9%	3.7%	27.8%	1.4%	28.7%
3	630	NEW YORK HARBOR HCS: NEW	216	6.0%	10.6%	8.8%	4.6%	66.7%	38.9%	0.5%	19.0%	0.5%	19.4%
3	632	NORTHPORT	183	4.9%	16.4%	10.9%	11.5%	59.0%	45.4%	0.5%	21.9%	2.2%	21.3%
4	460	WILMINGTON	83	10.8%	9.6%	9.6%	2.4%	53.0%	53.0%	0.0%	25.3%	1.2%	27.7%
4	503	ALTOONA	64	9.4%	14.1%	9.4%	6.3%	67.2%	39.1%	1.6%	10.9%	1.6%	26.6%
4	529	BUTLER	37	2.7%	2.7%	0.0%	2.7%	48.6%	54.1%	0.0%	35.1%	0.0%	18.9%
4	540	CLARKSBURG	92	6.5%	7.6%	4.3%	4.3%	55.4%	50.0%	2.2%	19.6%	7.6%	20.7%
4	542	COATESVILLE	262	2.7%	11.5%	7.6%	6.9%	45.8%	56.9%	2.3%	20.2%	2.3%	32.1%
4	562	ERIE	82	6.1%	6.1%	4.9%	3.7%	52.4%	53.7%	1.2%	22.0%	0.0%	30.5%
4	595	LEBANON	292	7.2%	11.0%	7.2%	5.8%	51.4%	55.1%	0.7%	20.5%	0.0%	33.9%
4	642	PHILADELPHIA	614	7.8%	12.5%	9.3%	5.7%	57.3%	49.0%	0.7%	25.1%	1.0%	22.6%
4	646	PITTSBURGH HCS/HIGHLAND	595	8.7%	14.3%	10.6%	8.7%	54.6%	53.1%	4.5%	24.4%	2.7%	22.0%
4	693	WILKES BARRE	249	5.6%	16.9%	12.9%	7.6%	61.8%	41.8%	3.2%	15.7%	1.2%	22.9%
5	512	MARYLAND HCS/FORT HOWARD/PERRY POINT	504	9.7%	18.1%	14.3%	8.1%	55.4%	52.6%	2.0%	27.8%	3.8%	19.6%
5	613	MARTINSBURG	150	3.3%	10.7%	8.7%	7.3%	38.0%	65.3%	0.7%	40.0%	2.7%	22.0%
5	688	WASHINGTON	359	6.1%	10.3%	7.5%	7.5%	29.2%	74.7%	2.5%	48.2%	1.4%	24.2%
6	517	BECKLEY	66	6.1%	7.6%	3.0%	6.1%	54.5%	50.0%	0.0%	9.1%	0.0%	40.9%
6	558	DURHAM	146	5.5%	19.9%	15.1%	11.0%	45.9%	57.5%	4.1%	27.4%	4.8%	21.9%
6	565	FAYETTEVILLE NC	131	6.1%	10.7%	6.1%	6.9%	38.2%	66.4%	0.0%	19.8%	0.0%	48.1%
6	590	HAMPTON	190	2.6%	11.6%	7.4%	6.3%	45.8%	55.3%	2.1%	26.8%	0.0%	26.8%
6	637	ASHEVILLE-OTEEEN	58	3.4%	10.3%	8.6%	5.2%	50.0%	51.7%	0.0%	17.2%	3.4%	32.8%
6	652	RICHMOND	169	3.6%	12.4%	8.3%	6.5%	44.4%	59.2%	0.0%	27.2%	0.6%	31.4%
6	658	SALEM	307	3.9%	16.0%	12.7%	6.8%	59.6%	43.6%	4.2%	16.9%	1.0%	21.8%
6	659	SALISBURY	255	3.5%	14.1%	11.4%	11.4%	41.6%	61.2%	0.4%	41.6%	0.8%	18.8%
7	508	ATLANTA	361	10.8%	14.4%	11.1%	8.9%	38.2%	70.1%	2.8%	30.5%	3.9%	34.9%
7	509	AUGUSTA	313	3.2%	18.9%	14.7%	13.7%	46.0%	56.9%	6.1%	35.5%	2.6%	13.1%
7	521	BIRMINGHAM	273	7.0%	16.5%	11.7%	11.0%	39.2%	65.6%	1.8%	39.9%	0.4%	24.2%
7	534	CHARLESTON	231	13.0%	15.6%	13.0%	8.7%	37.2%	71.9%	3.5%	30.3%	12.6%	29.4%
7	544	COLUMBIA SC	219	7.8%	14.6%	14.2%	5.0%	50.7%	54.3%	0.0%	29.2%	6.4%	20.1%
7	557	DUBLIN	148	6.1%	7.4%	5.4%	4.1%	37.8%	66.9%	0.0%	27.0%	1.4%	39.2%
7	619	CENTRAL ALAB. VETS. HCS/TUSKEGEE	396	1.5%	6.3%	3.5%	4.5%	41.7%	59.3%	0.5%	28.3%	5.1%	26.0%
7	679	TUSCALOOSA	224	4.9%	20.5%	17.9%	7.6%	63.8%	41.1%	5.8%	15.6%	0.0%	19.6%
8	516	BAY PINES	247	2.4%	12.6%	7.7%	8.1%	50.6%	50.2%	2.8%	19.0%	0.4%	28.3%
8	546	MIAMI	336	5.7%	15.8%	12.5%	7.4%	68.5%	33.6%	3.6%	12.8%	2.1%	15.5%
8	573	NO. FL. SO. GA. VET. HOSP/LAKE CITY	467	6.2%	11.8%	9.0%	6.2%	45.8%	59.3%	0.9%	35.3%	0.4%	23.3%
8	672	SAN JUAN	9	0.0%	0.0%	0.0%	0.0%	33.3%	66.7%	0.0%	33.3%	0.0%	33.3%
8	673	TAMPA	572	6.8%	9.8%	7.7%	5.6%	65.2%	40.0%	0.9%	21.0%	1.0%	18.2%
9	581	HUNTINGTON	126	0.0%	11.1%	8.7%	7.9%	72.2%	27.8%	0.0%	8.7%	1.6%	17.5%
9	596	LEXINGTON-LEESTO	126	5.6%	12.7%	8.7%	10.3%	37.3%	66.7%	2.4%	18.3%	0.0%	47.6%
9	603	LOUISVILLE	168	3.6%	8.3%	6.5%	4.2%	37.5%	64.9%	4.2%	41.7%	1.8%	18.5%
9	614	MEMPHIS	244	2.5%	12.3%	9.0%	6.6%	63.1%	38.5%	4.1%	13.1%	1.2%	20.5%
9	621	MOUNTAIN HOME	112	1.8%	6.3%	3.6%	3.6%	49.1%	52.7%	0.0%	23.2%	7.1%	22.3%
9	622	MURFREESBORO	311	7.7%	19.0%	16.7%	9.3%	53.4%	50.8%	3.5%	27.7%	1.6%	19.3%
9	626	NASHVILLE	182	3.8%	11.0%	8.2%	7.7%	45.1%	57.7%	2.7%	30.8%	2.2%	23.1%
10	538	CHILLICOTHE	285	11.2%	18.2%	16.8%	7.4%	68.8%	39.6%	8.1%	16.5%	2.8%	12.3%
10	539	CINCINNATI	203	14.3%	21.2%	19.2%	14.3%	39.9%	70.0%	5.9%	40.4%	8.9%	17.2%
10	541	CLEVELAND	893	7.3%	15.9%	13.8%	8.4%	47.5%	58.0%	9.2%	24.0%	3.2%	22.5%
10	552	DAYTON	186	4.3%	11.8%	9.1%	5.4%	50.0%	53.8%	1.6%	27.4%	1.1%	24.2%
10	757	COLUMBUS-IOC	168	6.0%	9.5%	8.3%	3.0%	60.7%	44.0%	0.6%	21.4%	0.0%	22.0%
11	506	ANN ARBOR	200	4.0%	23.0%	20.5%	18.0%	36.5%	65.0%	6.5%	41.5%	3.0%	15.0%
11	515	BATTLE CREEK	517	5.8%	16.1%	14.1%	4.6%	64.8%	40.6%	2.7%	22.4%	1.0%	14.5%
11	550	DANVILLE, IL	277	2.9%	15.5%	10.5%	11.6%	42.6%	59.2%	1.8%	29.2%	0.7%	27.8%
11	553	ALLEN PARK	423	4.5%	17.5%	13.7%	6.1%	52.7%	51.3%	3.8%	23.4%	1.2%	22.9%
11	583	INDIANAPOLIS	190	15.3%	17.9%	13.7%	9.5%	41.1%	71.6%	1.6%	41.6%	3.7%	27.4%
11	610	NORTHERN INDIANA/FORT WAYNE	243	3.7%	15.6%	14.8%	1.6%	78.6%	25.1%	1.6%	11.1%	1.2%	11.1%
11	655	SAGINAW	117	5.1%	13.7%	11.1%	8.5%	48.7%	55.6%	0.0%	31.6%	0.0%	23.9%
12	537	CHICAGO HCS/LAKESIDE	533	5.4%	9.4%	6.4%	6.4%	42.8%	62.1%	0.9%	28.7%	1.9%	31.1%
12	556	NORTH CHICAGO	92	3.3%	17.4%	14.1%	9.8%	33.7%	67.4%	2.2%	21.7%	3.3%	41.3%
12	578	HINES	252	8.3%	11.9%	7.9%	7.9%	40.9%	65.9%	3.6%	24.6%	1.6%	37.3%
12	585	IRON MOUNTAIN	60	10.0%	18.3%	11.7%	13.3%	33.3%	75.0%	0.0%	38.3%	3.3%	33.3%

VISN	Station	Station name	N	Percent with polypharmacy in past week	Percent dosed higher than PORT guidelines	Percent dosed high on conventionals	Percent dosed high on atypicals	Percent prescribed any conventional	Percent prescribed any atypical	Percent prescribed clozapine	Percent prescribed olanzapine	Percent prescribed quetiapine	Percent prescribed risperidone
12	607	MADISON	103	5.8%	19.4%	13.6%	12.6%	17.5%	86.4%	23.3%	34.0%	4.9%	26.2%
12	676	TOMAH	145	5.5%	20.7%	17.9%	13.8%	45.5%	59.3%	12.4%	26.9%	1.4%	18.6%
12	695	MILWAUKEE	247	13.4%	13.4%	10.1%	6.5%	52.6%	57.1%	4.9%	25.5%	3.2%	25.5%
13	437	FARGO	68	4.4%	13.2%	8.8%	11.8%	32.4%	69.1%	4.4%	22.1%	1.5%	44.1%
13	438	SIOUX FALLS	109	9.2%	11.0%	6.4%	8.3%	39.5%	67.0%	1.8%	21.1%	1.8%	45.0%
13	568	BLACK HILLS HCS/HOT SPRINGS	127	9.4%	13.4%	9.4%	7.1%	57.5%	47.2%	1.6%	8.7%	1.6%	37.0%
13	618	MINNEAPOLIS	376	6.1%	13.6%	8.8%	9.3%	41.2%	63.6%	4.5%	38.8%	0.8%	20.7%
13	656	ST CLOUD	153	2.0%	19.6%	12.4%	14.4%	39.9%	62.1%	9.8%	35.9%	0.0%	16.3%
14	555	CENTRAL IOWA HCS/KNOXVILLE	202	8.9%	26.2%	22.3%	15.3%	54.5%	53.5%	0.5%	26.2%	1.0%	25.7%
14	584	IOWA CITY	115	1.7%	16.5%	12.2%	13.0%	44.3%	57.4%	3.5%	32.2%	0.0%	21.7%
14	597	GREATER NEBRASKA HCS/GRAND ISLAND	99	6.1%	10.1%	7.1%	6.1%	41.4%	64.6%	6.1%	36.4%	2.0%	20.2%
14	636	OMAHA	146	5.5%	17.8%	14.4%	14.4%	36.3%	65.8%	7.5%	16.4%	4.1%	41.1%
15	452	WICHITA	68	2.9%	14.7%	13.2%	4.4%	50.0%	51.5%	2.9%	35.3%	4.4%	10.3%
15	543	COLUMBIA MO	71	15.5%	9.9%	8.5%	4.2%	39.4%	76.1%	0.0%	39.4%	2.8%	33.8%
15	589	KANSAS CITY	221	6.3%	19.9%	17.2%	11.8%	47.1%	58.4%	3.2%	21.3%	3.2%	31.7%
15	609	MARION IL	134	11.2%	9.0%	7.5%	5.2%	55.2%	53.7%	0.0%	36.6%	3.7%	15.7%
15	647	POPLAR BLUFF	55	1.8%	12.7%	5.5%	12.7%	29.1%	72.7%	0.0%	50.9%	1.8%	20.0%
15	657	ST LOUIS	553	15.6%	19.7%	15.7%	10.3%	47.2%	65.8%	2.4%	26.4%	3.4%	35.8%
15	677	EASTERN KANSAS HCS/LEAVENWORTH	350	11.7%	16.0%	14.0%	9.7%	46.3%	64.0%	3.4%	39.7%	2.0%	19.7%
16	502	ALEXANDRIA	183	9.3%	25.1%	21.3%	15.8%	36.6%	67.8%	6.6%	20.2%	0.0%	45.9%
16	520	BILOXI	556	9.9%	19.6%	15.1%	12.8%	45.1%	62.6%	1.8%	31.7%	0.4%	29.5%
16	564	FAYETTEVILLE AR	118	11.9%	16.9%	13.6%	12.7%	31.4%	74.6%	3.4%	28.8%	13.6%	33.9%
16	580	HOUSTON	535	4.3%	16.6%	11.0%	10.7%	36.4%	66.7%	2.4%	36.3%	0.9%	28.2%
16	586	JACKSON	263	4.9%	12.9%	7.2%	9.1%	28.1%	75.3%	1.1%	43.0%	2.7%	29.7%
16	598	LITTLE ROCK	309	6.5%	13.9%	10.0%	10.7%	32.4%	71.5%	4.2%	30.1%	6.8%	32.4%
16	623	MUSKOGEE	111	6.3%	6.3%	4.5%	6.3%	30.6%	74.8%	0.9%	31.5%	1.8%	41.4%
16	629	NEW ORLEANS	365	5.2%	11.8%	8.5%	7.1%	26.6%	78.4%	0.3%	55.3%	0.0%	23.0%
16	635	OKLAHOMA CITY	233	5.2%	4.7%	4.3%	1.3%	60.5%	44.2%	0.0%	21.0%	0.9%	22.7%
16	667	SHREVEPORT	182	1.6%	7.1%	3.3%	6.0%	33.5%	68.1%	0.5%	26.9%	3.8%	36.8%
17	549	NORTH TEXAS HCS/BONHAM	441	7.0%	11.3%	9.1%	7.7%	44.7%	59.9%	4.5%	35.6%	7.3%	15.4%
17	671	SOUTH TEXAS VETERANS HCS/KERRVILLE	407	6.4%	15.5%	9.6%	10.3%	43.0%	62.7%	2.9%	25.8%	2.9%	31.2%
17	674	CENTRAL TEXAS VETERANS HCS/MARLIN/WACO	546	5.3%	14.3%	11.4%	7.1%	37.2%	66.9%	3.1%	36.8%	6.6%	21.4%
18	501	ALBUQUERQUE	200	3.0%	11.5%	9.5%	8.5%	35.5%	66.5%	4.0%	22.5%	3.0%	37.5%
18	504	AMARILLO	64	3.1%	3.1%	1.6%	1.6%	81.3%	21.9%	0.0%	9.4%	0.0%	12.5%
18	519	BIG SPRING	52	3.8%	5.8%	1.9%	5.8%	23.1%	80.8%	0.0%	40.4%	1.9%	38.5%
18	644	PHOENIX	339	6.2%	12.1%	7.4%	6.8%	48.4%	57.2%	1.2%	24.2%	2.1%	30.1%
18	649	PRESCOTT	30	3.3%	13.3%	6.7%	10.0%	46.7%	56.7%	0.0%	23.3%	3.3%	30.0%
18	678	TUCSON	142	7.0%	11.3%	4.2%	10.6%	17.6%	87.3%	0.0%	47.9%	1.4%	39.4%
18	756	EL PASO-IOC	79	2.5%	6.3%	5.1%	3.8%	44.3%	57.0%	0.0%	34.2%	0.0%	22.8%
19	436	MONTANA HCS/MILES CITY	67	16.4%	9.0%	6.0%	6.0%	43.3%	70.1%	0.0%	35.8%	3.0%	32.8%
19	442	CHEYENNE	52	7.7%	21.2%	21.2%	13.5%	34.6%	73.1%	3.8%	50.0%	5.8%	15.4%
19	554	DENVER	226	7.1%	15.9%	13.7%	8.0%	70.4%	35.4%	4.0%	14.2%	0.9%	17.3%
19	567	FORT LYON	113	5.3%	14.2%	12.4%	7.1%	27.4%	77.0%	8.0%	46.0%	2.7%	20.4%
19	575	GRAND JUNCTION	64	10.9%	18.8%	6.3%	18.8%	35.9%	71.9%	0.0%	23.4%	0.0%	51.6%
19	660	SALT LAKE CITY	202	7.4%	8.4%	5.4%	7.4%	21.8%	84.7%	6.9%	55.0%	2.0%	21.8%
19	666	SHERIDAN	68	7.4%	16.2%	7.4%	10.3%	38.2%	69.1%	1.5%	26.5%	7.4%	33.8%
20	463	ANCHORAGE	20	0.0%	20.0%	20.0%	20.0%	15.0%	85.0%	0.0%	60.0%	0.0%	25.0%
20	531	BOISE	129	4.7%	15.5%	10.1%	11.6%	45.0%	58.1%	1.6%	23.3%	8.5%	24.8%
20	648	PORTLAND	299	2.7%	15.4%	10.7%	10.7%	43.8%	58.5%	8.4%	32.4%	2.0%	16.1%
20	653	ROSEBURG	125	2.4%	18.4%	12.0%	11.2%	42.4%	60.0%	0.8%	24.0%	0.0%	35.2%
20	663	PUGET SOUND HCS†	462	8.0%	19.3%	14.3%	13.6%	42.0%	63.9%	4.1%	28.4%	4.8%	28.1%
20	668	SPOKANE	93	7.5%	9.7%	4.3%	8.6%	25.8%	78.5%	0.0%	46.2%	2.2%	32.3%
20	687	WALLA WALLA	59	10.2%	6.8%	5.1%	3.4%	42.4%	67.8%	0.0%	27.1%	0.0%	40.7%
20	692	WHITE CITY	56	17.9%	10.7%	7.1%	7.1%	55.4%	58.9%	0.0%	35.7%	0.0%	25.0%
21	459	HONOLULU	214	7.0%	15.0%	12.2%	8.9%	43.9%	62.6%	3.3%	26.2%	4.2%	29.4%
21	570	FRESNO	129	9.3%	20.9%	14.7%	16.3%	41.9%	64.3%	4.7%	34.9%	3.1%	23.3%
21	612	NORTHERN CALIFORNIA HCS†	407	6.4%	15.0%	11.3%	10.1%	35.6%	67.8%	2.9%	35.9%	1.5%	29.7%
21	640	PALO ALTO HCS†	546	7.7%	22.3%	17.9%	13.9%	35.5%	70.7%	6.4%	38.3%	4.9%	22.2%
21	654	RENO	76	5.3%	7.9%	3.9%	5.3%	18.4%	86.8%	0.0%	46.1%	5.3%	35.5%
21	662	SAN FRANCISCO	229	9.6%	15.7%	9.2%	11.8%	51.1%	56.8%	0.9%	35.4%	0.4%	21.0%
22	593	LAS VEGAS	124	5.6%	15.3%	11.3%	13.7%	30.6%	71.8%	3.2%	40.3%	3.2%	26.6%
22	600	LONG BEACH	327	8.3%	14.4%	11.3%	8.9%	43.7%	62.7%	4.0%	22.6%	3.4%	33.6%
22	605	LOMA LINDA	236	12.3%	15.7%	10.6%	10.2%	38.6%	70.3%	3.0%	33.5%	6.8%	29.7%
22	664	SAN DIEGO	343	7.3%	16.0%	11.7%	9.0%	55.7%	49.0%	1.5%	19.5%	6.7%	22.4%
22	691	GREATER LOS ANGELES HCS/OPC/SEPULVEDA	984	6.1%	16.9%	11.9%	12.3%	44.0%	60.2%	3.5%	22.3%	2.3%	33.6%
Min				0.0%	6.8%	3.9%	3.4%	15.0%	49.0%	0.0%	19.5%	0.0%	16.1%
Max				17.9%	22.3%	20.0%	20.0%	55.7%	86.8%	8.4%	60.0%	8.5%	51.6%
Mean				219	6.5%	13.9%	10.3%	45.0%	60.0%	2.8%	28.6%	2.5%	27.1%
Std. Dev.				173	3.8%	5.7%	5.0%	13.0%	13.0%	3.5%	10.6%	2.5%	9.0%
Coeff. of Var.				0.79	0.58	0.41	0.49	0.29	0.22	1.22	0.37	1.03	0.33

Table 4. Logistic regression results

Independent variable	Dependent Variable								
	Received multiple antipsychotics N = 2,096	Dosed higher than PORT guidelines N = 4,523	Dosed high on a conventional ^a N = 3,430	Dosed high on an atypical ^b N = 2,705	Received any atypical N = 18,124	Received clozapine ^b N = 935	Received olanzapine ^b N = 8,882	Received quetiapine ^b N = 773	Received risperidone ^b N = 7,944
Intercept	-2.0604 ***	-0.6052 ***	-0.2074	-1.1304 ***	1.4140 ***	-1.3388 ***	0.5873 ***	-3.5736 ***	-1.1657 ***
Age	-0.0155 ***	-0.0352 ***	-0.0414 ***	-0.0263 ***	-0.0243 ***	-0.0450 ***	-0.0019	-0.0109 **	0.0108 ***
Female	-0.1241	-0.3294 ***	-0.1048	-0.3895 ***	0.1677 **	-0.1005	-0.0697	0.2576	0.0336
Income (\$000)	0.0008	0.0004	0.0030 *	-0.0047 *	0.0007	0.0027	-0.0008	0.0011	0.0004
Black	-0.1819 **	-0.0462	0.1871 **	-0.2353 ***	-0.1348 ***	-0.7717 ***	0.0556	-0.2029 *	0.1020 **
Hispanic	-0.0100	-0.2269 *	-0.3913 **	-0.1226	-0.1108	-0.3351	-0.0334	-0.1035	0.1187
Any OBS or Alzheimer's DX	-0.0656	-0.0912	0.0659	-0.1742	0.3412 ***	0.2143	-0.1435 *	0.2475	0.0549
Any Substance Abuse DX	-0.1317 *	-0.1896 ***	-0.2502 ***	-0.1142 *	0.0580	-0.6404 ***	0.1271 **	-0.2570 **	0.0133
Any Major Dep./Bipolar DX	-0.1959 ***	-0.2411 ***	-0.2702 ***	-0.2520 ***	0.3401 ***	-0.4250 ***	0.0039	0.1228	0.0472
Any PTSD DX	-0.0940	0.0011	-0.1522	0.0970	0.2492 ***	-0.0798	0.1055 *	0.0772	-0.0983 *
Any Anx Dis/Adj Reaction DX	0.0362	-0.1610 **	-0.1434	-0.1724 **	0.1694 ***	-0.2666 *	-0.0202	-0.0323	0.0586
Any Personality Disorder DX	-0.1390	-0.1412	-0.0375	-0.1955 *	0.1474 **	-0.1071	-0.1334 *	0.3246 **	0.0731
Any Other MH DX	-0.1780	-0.2207 **	-0.2718 *	-0.1866 *	0.0709	-0.1096	0.1158 *	0.0770	-0.1384 *
Service Connected 10-50%	-0.2371 **	-0.3849 ***	-0.6341 ***	-0.1593 *	-0.2536 ***	-0.3259 *	-0.0523	-0.1125	0.1076 *
Service Connected 60-100%	0.2336 ***	0.3506 ***	0.2288 ***	0.4429 ***	-0.1849 ***	0.7208 ***	0.0612	0.0596	-0.1904 ***
Distance to VAMC	0.0000	0.0000	0.0004	-0.0002	0.0006 ***	-0.0013 *	-0.0001	0.0004	0.0002
1 to 18 IP psy days prev year	0.3319 ***	0.0552	0.1869	-0.0283	0.4948 ***	-0.5965 ***	0.0580	0.6768 ***	-0.0711
19 or more IP psy days prev year	0.6906 ***	0.5530 ***	0.9626 ***	0.2737 ***	0.7965 ***	0.4659 ***	0.0268	1.2311 ***	-0.3540 ***
Continuity of care	0.0136	0.0536 ***	-0.0139	0.0938 ***	0.0040	0.0887 **	-0.0840 ***	0.0685 *	0.0657 ***
Fraction of MH costs on R&E	1.1291 *	0.9814 **	0.8742	1.1116 *	0.1448	1.8652 **	0.6183	3.8477 ***	-1.6690 ***
Fraction of MH costs on IP care	0.0806	0.2713 **	0.2649	0.3428 **	0.0042	-0.1576	-0.4307 ***	0.2614	0.4862 ***
Change in per capita MH costs	-0.0729	-0.0693	0.0283	-0.2294 *	-0.2308 ***	0.4493 ***	0.2685 ***	0.3192	-0.4166 ***
1995 per capita MH costs (\$000)	-0.0025	0.0475 ***	0.0659 ***	0.0245 *	-0.0283 ***	0.1094 ***	0.0029	-0.0245	-0.0305 ***
R ² with patient characteristics ^c	0.009	0.031	0.044	0.023	0.063	0.029	0.003	0.016	0.011
R ² with patient and facility characteristics	0.009	0.033	0.047	0.026	0.065	0.033	0.007	0.018	0.016
R ² with patient characteristics and facility dummy variables ^c	0.025	0.045	0.066	0.041	0.109	0.068	0.045	0.047	0.059
% total explained variance explained by patient characteristics	34.4%	68.7%	66.9%	54.6%	58.0%	43.3%	7.6%	32.7%	19.2%
% total explained variance explained by facility characteristics	1.2%	6.0%	4.5%	8.0%	1.6%	5.6%	8.1%	5.5%	7.1%
% total explained variance explained by facility dummies	64.4%	25.3%	28.6%	37.4%	40.5%	51.1%	84.3%	61.8%	73.7%

N = 30,819

* p<0.05, ** p<0.01, *** p<0.001

^a Among patients who received a conventional antipsychotic medication (N = 14,310).^b Among patients who received an atypical antipsychotic medication (N = 18,124).^c Determined from OLS regression models.